

What is claimed is:

1. A system for interfacing with at least one node in a Fibre Channel network, the system comprising:
  - 5 at least one input interface couplable to receive a plurality of frames of data, the frames of data being at least one of transmitted and received at a node of a Fibre Channel network; and
  - an output interface couplable to provide the received frames of data to a device.
2. The system of Claim 1, wherein the input interface includes an optical connection couplable to the node of the Fibre Channel network.
- 10 3. The system of Claim 1, wherein the input interface includes an electrical connection couplable to the node of the Fibre Channel network.
4. The system of Claim 1, wherein the input interface is programmable to receive all of the plurality of the frames of data that are transmitted from or received at the node.
- 15 5. The system of Claim 1, wherein the input interface is programmable to receive frames of data that are transmitted from the node to destination nodes having predetermined addresses.
6. The system of Claim 1, wherein the input interface is programmable to receive frames of data that are received at the node from source nodes having predetermined addresses.
- 20 7. The system of Claim 1, wherein the device includes a recorder.
8. The system of Claim 1, wherein the device includes a telemetry device.
9. The system of Claim 8, wherein the telemetry device includes a real-time monitor.
10. The system of Claim 1, wherein the output interface is configured to provide the received frames of data in pulse code modulation (PCM) formatted frames.
- 25 11. The system of Claim 10, wherein the output interface is further configured to time stamp the PCM frame.



12. The system of Claim 10, wherein the output interface is configured to fill the PCM frames with a fill word when a frame of data is not available from the input interface.

13. The system of Claim 12, wherein the output interface fills the PCM frames to maintain a substantially constant output frame rate.

5 14. The system of Claim 12, wherein the output interface fills the PCM frames at a predetermined time interval.

15. The system of Claim 14, wherein the predetermined time interval is approximately 10 milliseconds.

10 16. The system of Claim 1, further comprising a processor coupled to control the input interface and the output interface.

17. The system of Claim 16, wherein the processor is configured to program the input interface to receive frames of data received at the node from source nodes having predetermined addresses.

15 18. The system of Claim 16, wherein the processor is configured to program the input interface to receive frames of data transmitted from the node to destination nodes having predetermined addresses.

19. The system of Claim 16, wherein the processor is configured to program the output interface to fill PCM frames with a fill word when a frame of data is not available from the input interface.

20 20. A system for interfacing with at least one node in a Fibre Channel network, the system comprising:

at least one input interface couplable to receive a plurality of frames of data, the plurality of frames of data being at least one of transmitted from and received back in a node of a Fibre Channel network;

25 an output interface couplable to provide the received frames of data in pulse code modulation (PCM) formatted frames to a device; and  
a processor coupled to control the input interface and the output interface.

21. The system of Claim 20, wherein the input interface includes an optical connection couplable to the node of the Fibre Channel network.



22. The system of Claim 20, wherein the input interface includes an electrical connection couplable to the node of the Fibre Channel network.

23. The system of Claim 20, wherein the input interface is programmable to receive all of the plurality of the frames of data that are transmitted from or received at the node.

5 24. The system of Claim 20, wherein the input interface is programmable to receive frames of data that are transmitted from the node to destination nodes having predetermined addresses.

10 25. The system of Claim 20, wherein the input interface is programmable to receive frames of data that are received at the node from source nodes having predetermined addresses.

26. The system of Claim 20, wherein the device includes a recorder.

27. The system of Claim 20, wherein the device includes a telemetry device.

28. The system of Claim 27, wherein the telemetry device includes a real-time monitor.

29. The system of Claim 20, wherein the output interface is further configured to time stamp the PCM frame.

15 30. The system of Claim 20, wherein the processor is configured to program the output interface to fill the PCM frames with a fill word when a frame of data is not available from the input interface.

31. The system of Claim 30, wherein the processor is configured to program the output interface to fill the PCM frames to maintain a substantially constant output frame rate.

20 32. The system of Claim 30, wherein the processor is configured to program the output interface to fill the PCM frames at a predetermined time interval.

33. The system of Claim 32, wherein the predetermined time interval is around 10 milliseconds.

25 34. A Fibre Channel network comprising:  
a first port configured to at least one of transmit and receive a plurality of frames of data;



a second port configured to transmit a plurality of frames of data;  
a third port configured to at least one of transmit and receive a plurality of frames of data;  
5 a fourth port configured to transmit a plurality of frames of data;  
a first network device having a first node coupled to the first port;  
at least one second network device having a second node coupled to the third port;  
and  
a system operatively coupled to and adapted to interface with the first and second nodes, the system including:  
10 at least one input interface couplable to receive a plurality of frames of data, the plurality of frames of data being at least one of transmitted and received at a node of a Fibre Channel network; and  
an output interface couplable to provide the received frames of data to a device.

15 35. The network of Claim 34, further comprising a first Fibre Channel switch that includes the first and second ports.

36. The network of Claim 35, further comprising a second Fibre Channel switch that includes the third and fourth ports.

20 37. The network of Claim 34, wherein the input interface includes an optical connection couplable to the node of the Fibre Channel network.

38. The network of Claim 34, wherein the input interface includes an electrical connection couplable to the node of the Fibre Channel network.

39. The network of Claim 34, wherein the input interface is programmable to receive all of the plurality of the frames of data that are transmitted from or received at the node.

25 40. The network of Claim 34, wherein the input interface is programmable to receive frames of data that are transmitted from the node to destination nodes having predetermined addresses.

41. The network of Claim 34, wherein the input interface is programmable to receive frames of data that are received at the node from source nodes having predetermined addresses.  
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42. The network of Claim 34, wherein the device includes a recorder.

43. The system of Claim 34, wherein the device includes a telemetry device.

44. The network of Claim 43, wherein the telemetry includes a real-time monitor.

45. The network of Claim 34, wherein the output interface is configured to provide the received frames of data in pulse code modulation (PCM) formatted frames.

5 46. The network of Claim 45, wherein the output interface is further configured to time stamp the PCM frame.

47. The network of Claim 45, wherein the output interface is configured to fill the PCM frames with a fill word when a frame of data is not available from the input interface.

10 48. The network of Claim 47, wherein the output interface fills the PCM frames to maintain a substantially constant output frame rate.

49. The network of Claim 47, wherein the output interface fills the PCM frames at a predetermined time interval.

50. The network of Claim 49, wherein the predetermined time interval is around 10  
15 milliseconds.

51. The network of Claim 34, further comprising a processor coupled to control the input interface and the output interface.

52. The network of Claim 51, wherein the processor is configured to program the input interface to receive frames of data received at the node from source nodes having  
20 predetermined addresses.

53. The network of Claim 51, wherein the processor is configured to program the input interface to receive frames of data transmitted from the node to destination nodes having predetermined addresses.

54. The network of Claim 51, wherein the processor is configured to program the output interface to fill PCM frames with a fill word when a frame of data is not available  
25 from the input interface.

55. An aircraft comprising:



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- a fuselage;
- at least one engine;
- lift generating surfaces; and
- a plurality of avionics units networked with a Fibre Channel network, the network including:

a first port configured to at least one of transmit and receive a plurality of frames of data;

- 10 a second port configured to transmit a plurality of frames of data;
- 11 a third port configured to at least one of transmit and receive a plurality of
- 12 frames of data;

a fourth port configured to transmit a plurality of frames of data;  
a first network device having a first node coupled to the first port;  
at least a second network device having a second node coupled to the third

15 port; and  
a system for interfacing with the first and second nodes, the system  
including:

20 at least one input interface couplable to receive a plurality of frames of data, the plurality of frames of data being at least one of transmitted and received at a node of the Fibre Channel network; and

56. The aircraft of Claim 55, wherein the aircraft includes a fixed wing aircraft.

57. The aircraft of Claim 55, wherein the aircraft includes a rotary wing aircraft.

25 58. The aircraft of Claim 55, further comprising a first Fibre Channel switch that includes the first and second ports.

59. The aircraft of Claim 58, further comprising a second Fibre Channel switch that includes the third and fourth ports.

60. The aircraft of Claim 55, wherein the input interface includes an optical connection  
30 couplable to the node of the Fibre Channel network.



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61. The aircraft of Claim 55, wherein the input interface includes an electrical connection couplable to the node of the Fibre Channel network.

62. The aircraft of Claim 55, wherein the input interface is programmable to receive all of the plurality of the frames of data that are transmitted from or received at the node.

5 63. The aircraft of Claim 55, wherein the input interface is programmable to receive frames of data that are transmitted from the node to destination nodes having predetermined addresses.

10 64. The aircraft of Claim 55, wherein the input interface is programmable to receive frames of data that are received at the node from source nodes having predetermined addresses.

65. The aircraft of Claim 55, wherein the device includes a recorder.

66. The aircraft of Claim 55, wherein the device includes a telemetry device.

67. The aircraft of Claim 66, wherein the telemetry device includes a real-time monitor.

15 68. The aircraft of Claim 55, wherein the output interface is configured to provide the received frames of data in pulse code modulation (PCM) formatted frames.

69. The aircraft of Claim 68, wherein the output interface is further configured to time stamp the PCM frame.

70. The aircraft of Claim 68, wherein the output interface is configured to fill the PCM frames with a fill word when a frame of data is not available from the input interface.

20 71. The aircraft of Claim 70, wherein the output interface fills the PCM frames to maintain a substantially constant output frame rate.

72. The aircraft of Claim 70, wherein the output interface fills the PCM frames at a predetermined time interval.

25 73. The aircraft of Claim 72, wherein the predetermined time interval is around 10 milliseconds.

74. The aircraft of Claim 55, further comprising a processor coupled to control the input interface and the output interface.



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75. The aircraft of Claim 74, wherein the processor is configured to program the input interface to receive frames of data received at the node from source nodes having predetermined addresses.

76. The aircraft of Claim 74, wherein the processor is configured to program the input interface to receive frames of data transmitted from the node to destination nodes having predetermined addresses.

77. The aircraft of Claim 74, wherein the processor is configured to program the output interface to fill PCM frames with a fill word when a frame of data is not available from the input interface.

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